2015-01-01

Online assessment of negotiation skills through 3D role play simulation

Pacella, D

Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)

Online Assessment of Negotiation Skills through 3D Role Play Simulation

Daniela Pacella[1], Andrea Di Ferdinando[2], Elena Dell'Aquila[1], Davide Marocco[1]

[1]Plymouth University, Plymouth, United Kingdom
{daniela.pacella,e.dellaquila}@plymouth.ac.uk
davide.marocco@gmail.com
[2]AIDVANCED Srl, Rome, Italy
andrea.diferdinando@aidvanced.com

Abstract. The lack of standardised technological tools to assess psychological characteristics allows traditional tests to be still widely used, though these tests require double processing and expensive procedures. ENACT is both a serious game for a standardised assessment of the user negotiation skills and an Intelligent Tutoring System, which makes use of the data collected during the interaction in order to generate a tailored environment for the user to experience and improve their skills and be guided through learning.

Keywords: Serious games, e-learning, Artificial Intelligence, Intelligent Tutoring Systems, negotiation

1 Methodology and Implementation

In the actual e-learning and serious game context, what emerges is the lack of standardised technological tools to assess psychological characteristics and deficits.

The European Project ENACT (Enhancing Negotiation skills through on-line Assessment of Competencies and interactive mobile Training) aims at developing a 3D environment where users can:

1. Receive scientific, standardised profiles of their negotiation skills in a handy way;
2. Be guided through learning by an integrated Intelligent Tutoring System.

The ENACT platform consists of an assessment and a training environment. The assessment is composed of 8 scenarios, in which the user deals with a structured virtual agent, standardised on Rahim and Bonoma's [1][2] model of negotiation. This model differentiates four styles upon two dimensions, concern for self and for others:

1. Integrating (high concern for self and others)
2. Obliging (low concern for self and high concern for others)
3. Dominating (high concern for self and low concern for others)
4. Avoiding (low concern for self and others)

The training environment, which begins at the end of the assessment session, makes use of all the data and profile scores collected in the previous environment to build an intelligent and responsive environment which is suited to the user's needs. Artificial Intelligence is used in this context for two main purposes:

1. Generating an adaptive virtual agent initialised according to the user profile;
2. Finding correlations among user behaviour and negotiation profiles.

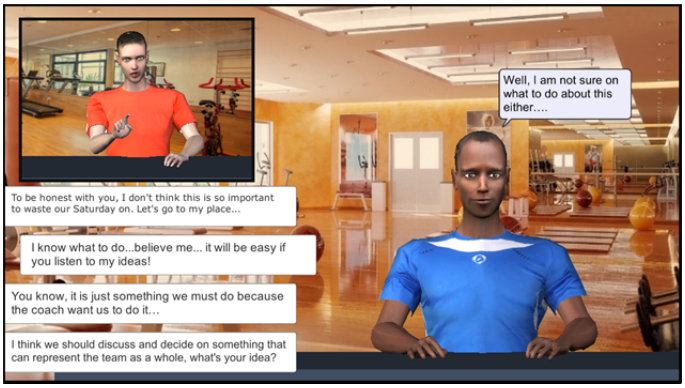

Fig. 1. Screenshot of the current platform interface of the assessment session (demo version).

Fig.1 shows the platform GUI. For each interaction, the user (the game character on the left) is asked to select a sentence on the four proposed, which is correlated to a specific gesture and face expression. Preliminary data on the beta version of the platform were collected at Plymouth University in September 2014. 152 subjects, of which 72 in the age 6-10 and 79 between the age of 11 and 60 (mean age ≈ 20.6, 41 males and 38 females) tested the game, and the latter were asked to complete a questionnaire about the game. The average rating for each of the question never scored below 3.5 on a 5 points Likert scale except for two questions, one regarding the realism of the conversations and one concerning the game graphics which scored a mean of 3.4 and 3.3. 93% of the subjects answered that they would play the game again.

The distinct contribution that we would like the ENACT Platform to give to the serious game and e-learning community is based upon the importance of the gamification of standardised psychological tests. We also wish to underline the importance of the validation that we want to achieve inside the ENACT Platform that will give a scientific based reliable profile easily accessible within all modern devices. The platform is still under development, and a demo can be found at **http://enactgame.eu**.

References

1. Rahim, M. A., Bonoma, T. V.: Managing organizational conflict: A model for diagnosis and intervention. Psychological Reports, vol. 44, pp. 1323-1344 (1979).
2. Rahim, M.A.: A Measure of Styles of Handling Interpersonal Conflict. Academy of Management Journal, vol. 26, pp. 368-376 (1983).